

06/22/98

jc406 U.S. PTO
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* ADMITTED IN VIRGINIA
+ ADMITTED IN PENNSYLVANIA
* NOT ADMITTED IN D.C.

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UNITED STATES OF AMERICA

22 June 1998

INTELLECTUAL PROPERTY LAW

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Attorney Docket: P55248

06/22/98
U.S. PTO
09/100952

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Submitted herewith is the following patent application:

Inventor: Kwang-Youn PARK

803, Woosung Apt., Maetan-dong, Paldal-gu, Suwon-city, Kyungki-do. KOREA

YOUN-HO KIM

402-105, Jukong Apt., Haan-dong, Kwangmyung-city, Kyungki-do. KOREA

**Title: METHOD AND APPARATUS FOR RESERVE-RECORDING A
VIEWING BROADCAST PROGRAM**

Please find attached hereto an application for patent which includes: Specification and Abstract, Claims, original Declaration And Power of Attorney, Assignment, and a certified copy of the foreign priority document identified below:

Verified Showing of Small Entity Status: **NO**

Drawings: Formal drawings, 1 sheets, Figures 1 through 2

Claim of priority under 35 U.S.C. §119: **YES**

** REPUBLIC OF KOREA Application No. 26306/1997 filed on 20 June 1997

FEE (see formula below): CHECK IS ENCLOSED

Basic Fee \$395/790 \$790.00

Additional Fees:

Total number of claims in excess of 20__ times \$11/22 . \$0.00

Number of independent claims in excess of 3: __ times \$41/82 \$0.00

Multiple Dependent Claims \$130/260 \$0.00

An Assignment is likewise enclosed: Recording Fee \$40 . . \$0.00

Filing Non-English specification \$0.00

TOTAL FEES FOR THE ABOVE APPLICATION \$790.00

09/100952, 06/22/98

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Page Two

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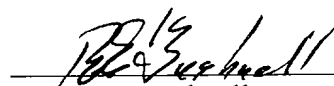
Assistant Commissioner is authorized to charge our Deposit Account No. 02-4943 for any **additional charges** necessary towards payment of the filing fee for the above-referenced application. Please notify the undersigned attorney of any transaction regarding our Deposit Account.

In view of the above, it is requested that this application be accorded a filing date pursuant to 37 CFR 1.53(b).

Please address all correspondence to:

Robert E. Bushnell
1511 K Street, N.W.
Suite 425
Washington, D.C. 20005

Respectfully submitted,



Robert E. Bushnell
(Registration No. 27,774)
Payor No.: 008-439
Attorney for the Applicant
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REB/kt

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">06/22/98</div> <div> <h1 style="margin: 0;">FILE TRANSMITTAL</h1> <p style="font-size: small; margin-top: 5px;">Patent fees are subject to annual revision on October 1. These are the fees effective October 1, 1997. Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12. See 37 C.F.R. §§1.27 and 1.28.</p> </div> </div>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Complete If Known</th> </tr> <tr> <td style="width: 50%;">Application Number</td> <td style="width: 50%;">To be assigned</td> </tr> <tr> <td>Filing Date</td> <td>22 June 1998</td> </tr> <tr> <td>First Named Inventor</td> <td>Kwang-Youn PARK et al.</td> </tr> <tr> <td>Examiner Name</td> <td>To be assigned</td> </tr> <tr> <td>Group/Art Unit</td> <td>To be assigned</td> </tr> <tr> <td>Attorney Docket No.</td> <td>P55248</td> </tr> </table>		Complete If Known		Application Number	To be assigned	Filing Date	22 June 1998	First Named Inventor	Kwang-Youn PARK et al.	Examiner Name	To be assigned	Group/Art Unit	To be assigned	Attorney Docket No.	P55248																																																																																																																																																																						
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SUBMITTED BY				Complete (if applicable)	
Typed or Printed Name		Robert E. Bushnell, Esq.		Reg. Number	27,774
Signature				Date	June 22, 1998
				Deposit Account User ID	

REB/kt

TITLE OF THE INVENTION

**METHOD AND APPARATUS FOR RESERVE-RECORDING
A VIEWING BROADCAST PROGRAM**

CLAIM FOR PRIORITY

This application makes reference to, incorporates the same herein, and claims all benefits accruing under 35 U.S.C. §119 from an application for *METHOD AND APPARATUS FOR RESERVE-RECORDING A VIEWING BROADCAST PROGRAM* earlier filed in the Korean Industrial Property Office on the 20th of June 1997, and there duly assigned Serial No. 26306/1997, a copy of which application is annexed hereto.

BACKGROUND OF THE INVENTION

Technical Field

The present invention relates to a method and apparatus for reserve-recording a broadcast program, and more particularly, to a method and apparatus for reserve-recording a viewing broadcast program so that while a user views a broadcast program, subsequent broadcast portion of the broadcast program is reserve-recorded.

Related Art

Generally, when a reserve-recording function of a broadcast program is executed by using a video cassette recorder (VCR) or a television incorporated with a VCR (TVCR), a user sets reserve-recording data such as a recording start time and end time, the channel of a desired broadcast program, types of reserve-recording, for example, once-recording, daily recording, every week recording, etc., and then press a reserve-recording button. Such a reserve-recording function requires the user to manipulate a number of times of keys, and can therefore be very burdensome and susceptible to mal-operations. Variations of this reserve-recording function are disclosed, for example, U.S. Patent No. 5,166,911 for *Timer Reservation Recording System* issued to Misawa et al., U.S. Patent No. 5,270,829 for *Automatically Reserve-Recording And Reserve-Playing Back A Broadcasted Program* issued to Yang, U.S. Patent No. 5,293,357 for *Method And Apparatus For Controlling A Television Program Recording Device* issued to Hallenbeck, U.S. Patent No. 5,453,793 for *Method For Recording A Series Program In A Video Cassette Recorder* issued to Kim, U.S. Patent No. 5,499,102 for *Display Device For Videocassette Recorder Recording Reservations* issued to Hashimoto, U.S. Patent No. 5,543,933 for *Reserve-Recording Method And Apparatus For VCR* issued to Kang et al., and U.S. Patent No. 5,646,603 for *Remote Control Apparatus For Recording/Playback Equipment*, U.S. Patent No. 5,657,414 to Lett et al., entitled *Auxiliary Device Control For A Subscriber Terminal* issued to Nagata et al.

Other simplified reserve-recording techniques such as "G code" recording have been proposed such as disclosed in U.S. Patent No. 5,479,267 for *Device For Combining VCR And TV*

issued to Hashimoto, and U.S. Patent No. 5,608,534 for *Apparatus And Method For Performing Reservation-Recording Of Video Cassette Recorder* issued to Park et al. Generally, G code is expressed with Arabic numerals up to 8-digits. The G code reserve-recording method uses special codes of programs listed on a newspaper or a TV program guide. When a user notes down special codes of programs listed on a newspaper and enters the numerals of a G code corresponding to the selected program into a VCR, the VCR analyzes the numerals and provides information containing a corresponding channel, reserve-recording start time and reserve-recording end time of a desired program. Thus, reserve-recording can be executed by inputting only numerals, without requiring the user to set information necessary for reserve-recording by manipulating a number of times of keys. However, the newspaper or program guide must be referred. Each broadcasting station transmits a broadcasting signal together with program identification information on a regular broadcast date, time and title with respect to a broadcasting program based on a predefined data format which is specified between broadcasting stations.

The VCR or TVCR has a function of reserve-recording a desired broadcast program and recording the reserve-recorded broadcast program, using received program identification information. This function is called a video programming system (VPS) in case of an European broadcast system and a Korean broadcast program system (KBPS) in case of a Korean broadcast system. In case of reserve-recording by the KBPS, the VCR extracts KBPS data contained in a received broadcast signal, pre-stores the extracted data, displays the stored KBPS data on a TV screen, and makes a user select a desired broadcast program. A basic picture viewed with the KBPS

1 data contains a current time, name of corresponding broadcast station, title of a broadcast program
2 to be broadcasted according to a broadcast schedule. The VCR changes a channel automatically
3 according to the KBPS data on a broadcast program selected by the user at the time when the
4 program is broadcasted, thereby allowing a desired broadcast program to be reserve-recorded.
5 However, irrespective of any types of reserve-recording, all conventional techniques require the user
6 to manipulate keys once or more to move a cursor on a TV screen around to set the reserve-recording
7 function. In addition, when reserve-recording a subsequent broadcast portion of the broadcast
8 program which a user currently views, the conventional technique converts a current viewing
9 broadcast picture into a reserve mode picture, or into a basic picture of the KBPS data. Therefore,
10 there has been a drawback in that the broadcast program under the user's viewing is interrupted when
11 setting reserve-recording.

12 SUMMARY OF THE INVENTION

13 Accordingly, it is therefore an object of the present invention to provide a broadcast program
14 reserve-recording method which can reserve-record a subsequent broadcasting portion of a broadcast
15 program by once manipulating a key while a user views the broadcast program.

16 It is also an object to provide a broadcast program reserve-recording apparatus which can
17 reserve-record a subsequent broadcasting portion of a broadcast program by once manipulating a key
18 while a user views the broadcast program.

19 These and other objects of the present invention can be achieved by a method for reserve-

1 recording a viewing broadcast program which comprises the steps of: (a) pre-storing program
2 identification information contained in broadcast programs of broadcast stations; (b) selecting
3 reserve-recording with respect to the viewed broadcast program during viewing the broadcast
4 program; (c) maintaining to view the broadcast program selected at step (b) and reading program
5 identification information corresponding to the selected broadcast program among the program
6 identification information stored at step (a); and (d) setting reserve-recording data with the program
7 identification information read at step (c).

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15 In accordance with another aspect of the present invention, a viewing broadcast program
reserve-recording apparatus comprises a first storage unit for pre-storing program identification
information contained in a broadcast signal of each broadcast station; a key input unit for applying
a key input signal for reserve-recording a viewing broadcast program; a controller for maintaining
a current broadcast picture just as is when receiving the key input signal from the key input unit,
reading program identification information corresponding to the broadcast program from the first
storage unit, and setting reserve-recording information with the read information; and a second
storage unit for storing reserve-recording information set by the controller.

16 The present invention is more specifically described in the following paragraphs by reference
17 to the drawings attached only by way of example.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the present invention, and many of the attendant advantages thereof, will become readily apparent as the same becomes better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings in which like reference symbols indicate the same or similar components, wherein:

FIG. 1 is a block diagram of a broadcast program reserve-recording apparatus of a broadcast program according to a preferred embodiment of the present invention; and

FIG. 2 is a flowchart illustrating an operation of the broadcast program reserve-recording apparatus as shown in FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings and particularly to FIG. 1, which illustrates a reserve-recording apparatus of a broadcast program during user's viewing according to a preferred embodiment of the present invention. A Korean broadcast program system (KBPS) is intended for reserve-recording a desired broadcast program and recording the reserve-recorded broadcast program using received program identification information. As shown in FIG. 1, the reserve-recording apparatus comprises a key input unit 11 for applying a key input signal to reserve-record a broadcast program during user's viewing; a first storage unit 13 for extracting KBPS data contained in a broadcast signal of each broadcast station and pre-storing the extracted data; a controller 12 for reading the KBPS data corresponding to a viewing broadcast program among the KBPS data stored in the first storage unit 13 according to the key input signal input from the key input unit 11, and

1 setting reserve-recording data with the read KBPS data; and a second storage unit 14 for storing the
2 set reserve-recording data.

3 The operation of the reserve-recording apparatus as shown in FIG. 1 will be described in
4 detail with reference to FIG. 2 as follows.

5 When a VCR or TVCR is turned on under the condition that a normal broadcast signal is
6 applied, a tuner (not shown) receives a broadcast signal introduced via an antenna and selects the
7 broadcast signal transmitted from each broadcast station according to channels. The first storage unit
8 13 extracts the KBPS data on a broadcast title, broadcast date, start time, end time and name of each
9 broadcast station concerning programs to be broadcasted, and stores the extracted data, wherein the
10 broadcast programs are contained in the broadcast signal of a selected channel.

11 Meanwhile, if a user inputs a reserve key signal for reserve-recording via the key input unit
12 11 while watching the broadcast program (step 201), the controller 12 receives the reserve key
13 signal, recognizes the current viewing broadcast program as a broadcast program to be reserve-
14 recorded, and reads reserve-recording data corresponding thereto from the first storage unit 13 (step
15 202). At this time, the controller 12 maintains a current viewing broadcast picture so that the
16 broadcast program under user's viewing is not interrupted. In step 202, the controller 12 reads the
17 KBPS data corresponding to the viewing broadcast program among the KBPS data pre-stored in the
18 first storage unit 13. The read KBPS data contains a title, date, time and channel number of a

1 program to be broadcasted. The controller 12 sets reserve-recording data using the same date, time
2 and channel number as a broadcast date, time and channel number concerning the broadcast program
3 included in the KBPS data read from the first storage unit 13 (step 203). The controller 12 stores
4 the set reserve-recording data in the second storage unit 14. When the reserve-recording is set, the
5 controller 12 performs a recording operation according to the reserve-recording data stored in the
6 second storage unit 14 under the stand-by status.

7 As described above, the method and apparatus for reserve-recording a broadcast program
8 during user's viewing according to the present invention is capable of checking data on a broadcast
9 date, time, channel numbers concerning the viewing broadcast program among program
10 identification information of pre-stored VPS data or KBPS data, and automatically setting reserve-
11 recording, without converting a current picture into a reserve-recording picture when a reserve key
12 signal for reserve-recording is applied during the viewing of the broadcast program. Therefore, the
13 present invention advantageously permits the subsequent broadcast portion of the current viewing
14 broadcast program to be reserve-recorded, without interrupting the viewing of the current broadcast
15 program.

16 While there have been illustrated and described what are considered to be preferred
17 embodiments of the present invention, it will be understood by those skilled in the art that various
18 changes and modifications may be made, and equivalents may be substituted for elements thereof
19 without departing from the true scope of the present invention. In addition, many modifications may

1 be made to adapt a particular situation to the teaching of the present invention without departing
2 from the central scope thereof. Therefore, it is intended that the present invention not be limited to
3 the particular embodiment disclosed as the best mode contemplated for carrying out the present
4 invention, but that the present invention includes all embodiments falling within the scope of the
5 appended claims.

What is claimed is:

1. A method for reserve-recording, during viewing, a broadcast program, comprising the steps of:

(a) pre-storing program identification information contained in broadcast programs of broadcast stations;

(b) selecting reserve-recording with respect to the broadcast program, during viewing of the broadcast program;

(c) maintaining the viewing of the broadcast program selected at step (b), and reading program identification information corresponding to the selected broadcast program among the program identification information pre-stored at step (a); and

(d) setting reserve-recording data with the program identification information read at step (c).

2. The method of claim 1, further comprised of said program identification information containing broadcast titles, broadcast date, time, and channel data on the broadcast program, and said reserve-recording data including channel data, recording date and time which are the same as those contained in the program identification information corresponding to the viewing broadcast program.

3. The method of claim 1, further executed by one of a video cassette recorder and

2 a television incorporated with a video cassette recorder.

1 4. The method of claim 2, further executed by one of a video cassette recorder and
2 a television incorporated with a video cassette recorder.

1 5. A reserve-recording apparatus, comprising:
2 a first storage unit for pre-storing program identification information contained in a
3 broadcast signal of each broadcast station;
4 a key input unit for applying a key input signal for reserve-recording a viewing broadcast
5 program;
6 a controller for maintaining a current broadcast program when receiving the key input signal
7 from the key input unit, reading the program identification information corresponding to the
8 broadcast program from the first storage unit, and setting reserve-recording information in
9 accordance with read information; and
10 a second storage unit for storing the reserve-recording information set by the controller.

1 6. The reserve-recording apparatus of claim 5, further comprised of said controller
2 reading channel data, broadcast date and time contained in the program identification information
3 corresponding to the viewing broadcast program, from the program identification information stored
4 in the first storage unit.

1 7. The reserve-recording apparatus of claim 5, further embodied in one of a video
2 cassette recorder and a television incorporated with a video cassette recorder.

1 8. The reserve-recording apparatus of claim 6, further embodied in one of a video
2 cassette recorder and a television incorporated with a video cassette recorder.

1 9. A method of reserve-recording a broadcast program, comprising the steps of:
2 receiving a broadcast signal from a designated broadcast station, via an antenna, and
3 extracting program identification information contained in the broadcast signal from said designated
4 broadcast station;

5 storing the program identification information contained in the broadcast signal from said
6 designated broadcast station in a first memory;

7 determining whether a reserve key signal is input by a user for reserve-recording while the
8 user is viewing the broadcast program;

9 when the reserve key signal is input by the user, during viewing, recognizing the viewing
10 broadcast program as a broadcast program to be reserve-recorded, and maintaining the viewing of
11 the broadcast program without interruption; and

12 reading the program identification information corresponding to the broadcast program
13 from the first memory, setting reserve-recording information in accordance with read information,
14 and storing the reserve-recording information in a second memory for reserve-recording.

1 10. The method of claim 9, further comprised of said program identification
2 information containing broadcast titles, broadcast date, time, and channel data on the broadcast
3 program, and said reserve-recording data including channel data, recording date and time which are
4 the same as those contained in the program identification information corresponding to the viewing
5 broadcast program.

1 11. The method of claim 9, further executed by one of a video cassette recorder and
2 a television incorporated with a video cassette recorder.

1 12. The method of claim 10, further executed by one of a video cassette recorder and
2 a television incorporated with a video cassette recorder.

ABSTRACT OF THE DISCLOSURE

A viewing broadcast program reserve-recording method and apparatus for reserve-recording a broadcast program, and maintaining a current viewing broadcast picture just as is. The reserve-recording apparatus pre-stores program identification information, for example, VPS data or KBPS data, contained in a broadcast program of each broadcast station, reads channel data, broadcast date and time contained in program identification information corresponding to the current viewing broadcast program among the pre-stored program identification information when a key input signal for reserve-recording the current viewing broadcast program is applied, and stores the read data as reserve-recording information. Accordingly, subsequent broadcasting portion of a broadcast program can be easily reserved for recording by simply manipulating a key while a user views the broadcast program.

FIG. 1

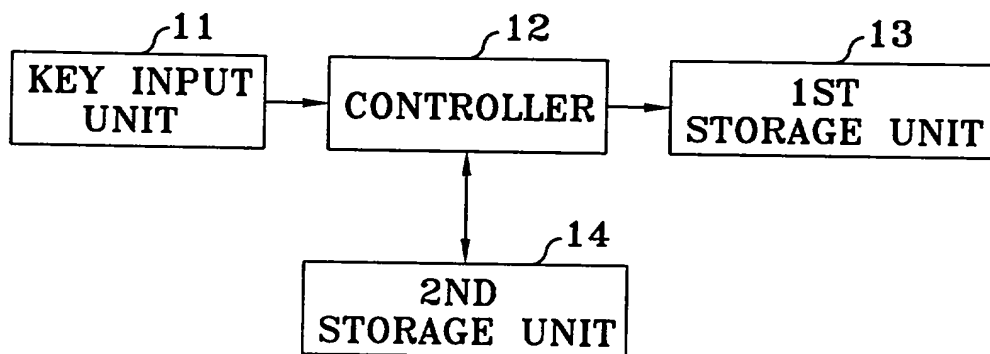
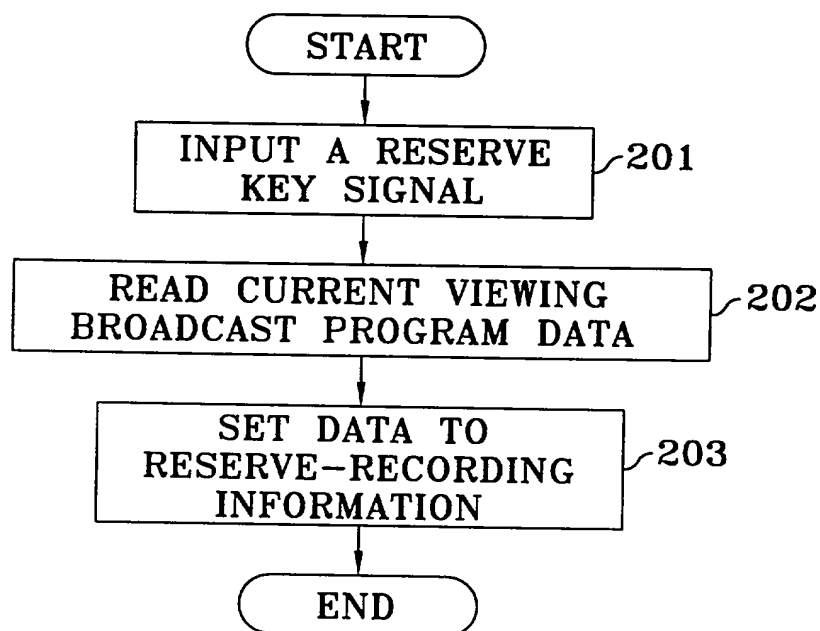


FIG. 2



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Kwang-Youn PARK et al.

Serial No.: *To be assigned*

Examiner: *To be assigned*

Filed: 22 June 1998

Art Unit: *To be assigned*

For: METHOD AND APPARATUS FOR RESERVE-RECORDING A VIEWING
BROADCAST PROGRAM

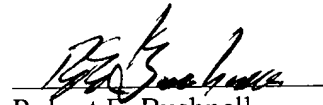
TRANSMITTAL OF DECLARATION

The Assistant Commissioner
for Patents
Washington, DC 20231

Sir:

This transmittal accompanies an original Declaration for the above-referenced application.

Respectfully submitted,



Robert E. Bushnell,
Attorney for the Applicant
Registration No.: 27,774

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Folio: P55248
Date: 06/22/98
I.D.: REB/kt

PENDING (PENDING)

DECLARATION

Check No. P 55248

As a BELOW NAMED INVENTOR, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe that I am the original, first and sole (if not one who is listed below), or an original, first and joint INVENTOR (if plural names are listed below), of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE: METHOD AND APPARATUS FOR RESERVE-RECORDING A VIEWING BROADCAST PROGRAM

the specification of which either is attached hereto or otherwise accompanies this Declaration, or

☐ was filed in the U.S. Patent & Trademark Office on _____ and assigned Serial No. _____☐ and (if applicable) was amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any and all dependent information. I acknowledge the duty to disclose information which is material to patentability and the substantiation of this application in accordance with Title 35 of the United States Code, § 114(a)-(d) or § 135(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, or of any United States provisional application(s), listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Application Number	Country	Date (Month/Year Filed)	Priority Claimed
300000000	KOREA	20 June 1997	Yes [X] No []
(Application Number)	(Country)	(Date/Month/Year Filed)	Yes [] No []
(Application Number)	(Country)	(Date/Month/Year Filed)	Yes [] No []

I hereby claim the benefit under Title 35, U.S. Code, § 120, of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, § 112, I acknowledge the duty to disclose information material to patentability as defined in Title 35, U.S. Code, § 112, which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Identification	Filing Date	STATUS: patented, pending, abandoned
(Application Number)	(Filing Date)	(STATUS: patented, pending, abandoned)

I hereby revoke all previously granted power of attorney and appoint the following attorneys: Robert E. Bushnell, Reg. No. 27,774, Michael D. Parker, Reg. No. 27,777, Henry M. Zarnic, Reg. No. 27,477, and Hung H. Bui, Reg. No. 40,415 to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of appointment and with full power to substitute an alternate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to:

Robert E. Bushnell,
Attorney-at-Law
Suite 426, 1511 K Street N.W.
Washington, D.C. 20005-1401

Payer No. 008439
Area Code: 202-638-5740

I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made in information and belief are believed to be true and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Date: 22 JUNE 1998

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Date: 21 JUNE 1998

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Inventor's signature: _____
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Additional inventors are being named on separately numbered sheets attached hereto.

Date: _____

FULL NAME OF FOURTH JOINT INVENTOR: _____

Citizenship: _____

Inventor's signature: _____
Residence & Post Office Address: _____
Additional inventors are being named on separately numbered sheets attached hereto.

Date: _____